SULLYS HILL NAT'L GAME PRESERVE NWR
NARRATIVE REPORT - 1967


FEB · 68

SULLYS HILL NATIONAL GAME PRESERVE

Sullys Hill National Game Preserve is one of four big-game areas, administered by the United States Fish and Wildlife Service, where native American bison or buffalo can be seen under natural conditions. This 994-acre preserve with its 700-acre big-game enclosure is located about 15 miles south of Devils Lake, North Dakota, on State Highway 57; or about 1 mile northeast of Fort Totten in the heart of the Sioux Indian Reservation. This picturesque, rolling tract of land with its timber and grassy meadows is a sanctuary for native wildlife so abundant on the Great Plains not so many years ago.

Wildlife

Buffalo: Unlike the darker, less humped, eastern bison, the last of which were killed about 1800, remnants of the vast herds of our Plains bison were preserved for posterity on the game preserves and parks of our Nation. A small herd--20 at present--of these magnificent animals may be seen within the enclosure at Sullys Hill. Those that you see here represent only a remnant of an estimated 60 million that roamed the Great Plains a few decades ago.

Elk: No one knows when the last wild, native elk was seen in this area; however, an occasional old antler is still found. Sullys Hill maintains a herd of between 20 and 30 of these animals, called "Wapiti" by the Indian hunter.

White-tailed Deer: There are over 40 deer in the enclosure at Sullys Hill. Although now common in North Dakota, it must be remembered that at the turn of the century they were all but extinct in this area.

Other Wildlife: Canada geese breed in semicaptivity on Sweetwater Lake in the Sullys Hill picnic area. During spring and fall their numbers are increased by migrant geese and other waterfowl that use the marsh and shorelines of the preserve. Upland game birds such as pheasants and sharp-tailed grouse are present, as well as many

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FISH AND WILDLIFE SERVICE
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seed-eating and insectivorous birds. Muskrats, weasels, raccoons, rabbits, skunks, fox and gray squirrels, gophers, and other native mammals are represented.

Surplus big-game animals are given to zoos or parks or are otherwise disposed of annually to keep herds within the carrying capacity of the range. New blood is periodically introduced by transfers of bulls from other areas.

Recreational Facilities

About 60 acres of the preserve, surrounding Sweetwater Lake, have been set aside for use as picnic grounds. Shelters, fireplaces, drinking water, playground equipment, and toilet facilities are available. Tours through the big-game enclosure can be arranged by contacting the refuge manager. Molesting wildlife and plants, camping, firearms of any kind, and unleashed dogs are prohibited.

History

1839 Devils Lake area surveyed by Nicolette and Fremont.

1865 General Alfred Sully led expedition against Sioux in this area. (It was at this time that Sullys Hill received its name. A column of the 3rd Illinois Volunteer Cavalry was ordered to the Devils Lake region to join General Sully's forces. Although the two columns of soldiers failed to effect a junction, the Illinois group camped at the base of the hill and gave it its present name.)

1867 Fort Totten established.

1904 Presidential proclamation declares Sullys Hill a National Park.

1914 Congress establishes big-game preserve to be administered jointly by Departments of Agriculture and Interior.

1917 Fifteen elk received from Yellowstone Park. Four deer from Fargo, Agricultural Experiment Station.

1918 Six buffalo received from Portland, Oregon, City Park.

1921 Executive order declares Sullys Hill a bird refuge--all wildlife now protected.

1931 Congress removes Sullys Hill from National Park system, leaving Bureau of Biological Survey in full charge--later became Fish and Wildlife Service.

INT.-DUP. SEC., WASH., D.C. 17664

SULLYS HILL NATIONAL WILDLIFE REFUGE

BENSON COUNTY, NORTH DAKOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

VICINITY MAP
SCALE 1" = 15 MILES

99°02' 99°00' R 65 W 98°58' 98°56'

48°00'

47°58'

47°54'

DEVILS LAKE

BENSON COUNTY
RAMSEY COUNTY

RAMSEY COUNTY
BENSON COUNTY

Big Game Enc.

OLD MILITARY RESERVATION BOUNDARY

NORTH DAKOTA STATE HIGHWAY

FORT TOTTEN

Unit II

Unit I

G

H.S.

OLD MILITARY RESERVATION BOUNDARY

T 152 N

T 151 N

17	16	15	14	13	
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13

OLD MILITARY RESERVATION BOUNDARY

99°02' 99°00' R 65 W 98°58' 98°56'

COMPILED IN THE BRANCH OF ENGINEERING
FROM SURVEYS BY G.L.O. AND B.S.F.&W.

FIFTH PRINCIPAL MERIDIAN

0 80 40 80 120 160 CHAINS
0 ¼ ½ 1 1½ 2 MILES

TOWNSHIP DIAGRAM

TRUE NORTH
MAGNETIC N.

MEAN DECLINATION 1955

MINNEAPOLIS, MINNESOTA DECEMBER, 1959

3 R N.D. 88

NARRATIVE REPORT FOR

SULLYS HILL NATIONAL GAME PRESERVE

FORT TOTTEN, NORTH DAKOTA

AND

EASEMENT REFUGES OF DISTRICT NO. 2

CALENDAR YEAR 1967

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF SPORT FISHERIES AND WILDLIFE

FISH AND WILDLIFE SERVICE

SULLYS HILL NATIONAL GAME PRESERVE

FORT TOTTEN, NORTH DAKOTA

David L. Gilbert	Refuge Manager
Irvin A. Nelson	Wildlife Technician
promoted from Maintenanceman (12-17-67)	
Richard W. DeHaven (June 9 - Aug. 31)	Wildlife Aid
Louis E. Zieman (May 7 - Aug. 31)	Painter - Maintenance

I. General

A. Description of the Area

Sullys Hill Preserve is a 1674 acre area located on the south shore of Devils Lake in NE North Dakota. Its large wooded terminal moraine hills are unique in the open plains of the State. The largest of the hills was named for Gen. Alfred Sully, who led a compaign against the Sioux in 1865.

Tours of the 700 acre enclosure with its herds of 30 Bison, 20 Elk, and 20 White tailed deer are popular with refuge visitors. The 60 acre picnic area contains a 12 acre lake on which a few Canada geese are raised by our semi-captive display flock. Also displayed are Snow and Blue geese and Whistling swans. Several broods of wild ducks, including Wood ducks, are raised on the pool.

The area, established as a national park in 1904, is rich in Indian and early military history. Several burial mounds on the preserve are thought to be over 600 years old. Similarity of construction indicates a link with the mound builders of Mexico. What is now our big game pasture provided logs and clay bricks for the building of Fort Totten (one mile west of headquarters).

Also administered from the preserve are 12 easement refuges, in several surrounding counties, totaling 28,000 acres. These function in duck production and moulting and goose and duck migration. Best known is "Lac Aux Mortes", a goose hunters paradise locally called Lake Alice.

B. Weather Conditions

The weather year was characterized by extreme drouth during the growing season. Some local residents claimed the drouth was the worst since 1936. May - Sept. preciptation totaled 4"; normal is 12". Wildfires, frequent on the reservation during August, were extremely difficult to extinguish. Tree trunks and roots burned a foot or more under ground. Precipitation shown on the table is probably somewhat high. Devils Lake recieved several rains we did not get here. Temperatures during the year were about normal. Mean average temperatures for each month were within 5 degree of normal; June - Aug. within 1 degree.

The last date of killing frost is unknown. A light frost on July 2 was noticable in gardens, but did no real damage. The first fall killing frost was 21 degree on Sept. 27. The first trace of snow came Oct. 25.

The following summary is from data at Radio KDLR, Devils Lake:

1967 Weather Summary

	Temperature					Precipitation			
	Max	Ave	Min	Ave Min	Mean Ave	Pre.	Snow	Norm temp.	Norm pre.
Jan	40	19.4	-28	-1.9	8.8	.81	11.5	4.6	.53
Feb	41	16.0	-31	-8.9	3.6	.25	4.3	8.6	.65
Mar	70	34.6	-13	14.1	24.3	.34	4.2	21.6	.77
Apr	65	46.5	9	26.8	36.7	1.79	4.3	39.9	1.15
May	88	62.2	1	37.0	49.6	.43	6.0	53.4	2.11
June	91	75.3	38(5th)	50	62.7	1.56	-	62.5	3.36
Jul	96	83.8	39(3&4)*	53.8	68.8	.96	-	69.7	2.57
Aug	95	84.2	37(21st)	51	67.6	.44	-	67.4	2.18
Sep	88	74.8	21	46.1	60.5	.63		56.4	1.70
Oct	75	53.1	19	33.1	43.1	1.82	.7	44.3	1.07
Nov	60	36.5	-4	19.9	28.2	.09	.5	31.1	.68
Dec	47	22.2	-36	5.2	13.7	.95	13.1	11.7	.52
Ext	96		-36						
Ave		51		27	39	10.07	44.6	39	17.29

*Frost at Sullys Hill

C. Habitat Condition

1. Water. Breakup - SW. 4/17 all gone, began thawing April 5. Devil Lake all open 4/28 on April 17. All ice was gone from Devils Lake April 28.

Spring water conditions were excellent. Easement refuges were at Spillway levels. Sweetwater lake was again too high with two rock islands goose nests inundated.

By July, potholes in the enclosure were drying up, remaining dry during the summer and fall. The spring feeding the watering trough did not fail, however.

Potholes in the area east of Devils Lake held water well during the summer. To the west all but the best potholes dryed up. This drying was late enough, with enough brood areas remaining, so that the effect on waterfowl productivity was probably not too great. Brood size to flight age was no doubt reduced because of casualties during forced migrations to newbrood areas.

The effects of the year's drowth will be felt more in future years because of low levels at the end of the year, and more importantly, because the opportunity for field drainage was fully exploited by many landowners. One individual feared his well would go dry if he drained a slough near his buildings. His greed won out, however and he drained the marsh anyway.

Freezup on most lakes come on Nov. 6, then opened up from Nov. 10 - 20, when all permanently closed.

2. Food & Cover. The first spring field work was noted on April 14. Crop production in the area was spotly, but averaged near normal, to the surprise of many. Crops receiving surface moisture during the initial growth stages were carried thru by good sub-soil reserves. This was true of our only cropland, 30 acres of oats in unit II. Next year will be critical because sub-soil moisture is gone.

First cutting hay on the preserve yielded about 2/3 of last year's first cutting. There was no second cutting however. Most alfalfa and Brome went into dormancy, remaining brown until Sept. Because of additional seedings coming into production this year, total harvest was more than adequate for our winter feeding.

Despite the extremely dry season grazing use in the enclosure was only moderate.

Fruit and berry production was variable. Juneberries were fair, Chokecherrys abundant. No acorns were produced.

Patches of Buckbrush in the enclosure were mowed, as has been done at several year intervals. Because of the extreme drouth the effect looked much better than usual.

Two tons of 33.5-0-0 fertilizer was spread on 30 - 40 acres of steep slopes in the enclosure. Scheduled for June, the drouth delayed application until Sept. 19. It was applied by Foes-Meier Flight Service. Cost was 72/ton plus 1.5¢/lbs. for application.

II. WILDLIFE

A. Captive goose flock.

The goose flock was released to Sweerwater Lake Mar. 29. Of five known starts one nest (on land) was abandoned, two were inundated by high water. Two successful clutches hatched 5/21 & 25, produced 12 goslings, 10 of which survived. Eight young were picked up by the N.P.W.R.C., Jamestown, for their propagation flock. Two young, escaping capture, remain with the flock. Because of raccoon predation and human disturbance nests on shore are never successful. Additional rock islands are being built and existing islands raised to prevent flooding. We now plan to expand our breeding flock, using them to establish flocks on other water bodies in the vicinity.

Geese (Lake Alice) The first spring ~~animals~~ arrivals were 100 Small Canadas reported at Lake Alice on March 23. On March 27 Gilbert noted 2500 Small Canadas, 500 Large Canadas, 100 Snows and Blues. About 200 Mallards and Pintails were also noted in standing water in fields adjacent to Lake Alice. On March 30 1200 Canadas, 1800 Snows and Blues were noted. 5000 Snows and Blues were observed, white heard on May 2nd. The above observations were made from the ground, of birds seen flying over the marsh.

The first fall migrants seen were 50 Small Canadas and 50 Snow and Blues on Sept. 19. On Oct. 4 Pilot Winship & John Bouman counted the Devils Lake area from the air:

3. A.

	Canadas	Snow and Blues
Devils Lake	300	800
Sweetwater - Morrison L.	230	1875
Dry Lake	100	600
Lake Alice (& Chain L.)	-	4500
Snyder Lake	-	850
Rock Lake	100	4560
Rush Lake	200	25
Kirk (E. Devils Lake.)	100	1200
	1030	14,410

On Oct 27 John Elsperger reported 2000 geese on Lake Alice, 5000 on adjoining Lake Irvin. Nearly all geese deported after a cold snap in the first week of Nov. put ice on all the lakes. During the second week the lakes opened again with some open water until Nov. 20, but the birds were already gone.

Swans Eight whistling swans were feeding in Devils Lake (Ft. Totten Bay) on April 13; moved on after a few days.

The fall migration began with 80 birds on Sept. 29 peaking at 200 Oct. 6. 30 remained until Nov. 3rd. 400 Swans were observed from the air Nov. 12, along the W. shore of Devils Lake. (off refuge)

4. A. Ducks The first spring migrants seen were about 200 Mallards and Pintails near Lake Alice on March 27. An aerial pair count of the easements was flown by Winship & Gilbert on May 24 (see table easement section) L. Scaup were still migrating thru, about 200 were present on Silver Lake.

(con't)

Weekly counts were made at Sullys Hill on Sweetwater Lake and the Devils Lake shore adjoining the preserve. No notable spring peaks occurred on most species. Migration peaks were noted on BWT, L. Scaup, Ruddy on the May 13 count. Two pair of Wood Ducks used Sweetwater Lake in the spring but no broods were produced. Easement brood counts were flown July 25 by Winship, Gilbert, DeHaven. An unusually high number of ducks was noted on Lake Alice. 90 broods were counted on Lake Alice, compared with an average since 1957 of 52. The highest previous was 73 in 1966.

An influx of fall migrants was noted Aug. 12. Peak counts of nearly all species occurred on Oct. 28. Ruddies peaked during Sept. 23 - 30. Most ducks left during the first week of Nov. Devils Lake contained a fair number until complete freezup Nov. 20.

Waterfowl hunting was very good throughout the area.

B. Upland Birds Sharp-tails and Grey partridge may have been down somewhat in 1967. Covies were occasionally seen in the surrounding area, but none were observed on the preserve. An acre of oats left standing in unit II shows no evidence of use.

Pheasants are practically extinct here. Gilbert saw two road killed cocks west of Devils Lake during the year. Mrs. Gilbert saw one cock near a bush late Jan. by the culvert plant. The birds apparently scattered widely, with sightings reported several miles away during the fall. We have heard no recent reports of sightings.

C. Hawks, Owl, Crows, Ravens, Magpies. Two Bald eagles were observed along Hy. 57 on Nov. 30. On Dec. 19, Gilbert saw one Golden, two unid. eagles at Pleasant Lake.

Red Tailed Hawks and Marsh Hawks were commonly observed during the summer.

Great Horned and Screech Owls were heard occasionally at the preserve during the year. None were seen. The first crow seen in the spring was March 17. About 60 crows staged near Lake Alice during the spring migration, remaining in the same area from March 20 to April 5. An estimated 8 pair nested on the preserve. Three of the birds, nesting near Sweetwater Lake were shot by refuge personnel.

Bunches of Magpies up to 12 in number congregated in the enclosure during the animal disposal, feeding on the offal.

D. Other Birds March 23 marked the beginning of spring arrivals with Canada goose Bufflehead R-b gull, W. Meadowlark first seen on that date. Several species of water birds frequented Sweetwater Lake in the recreation area, including Kingfishers, Cormorants, G-b herons, Bc night herons, Coots, Eared grebes, P-b grades, R-b gulls, Common terns, Franklins gulls, Black terns. Several species of Shorebirds were noted during the summer. Two American egrets were observed Aug. 18.

The Christmas Bird Count was conducted Dec. 27 with Gilbert, Nelson, Vic Hall and Jim Heinecke (Wetlands Office) participating. The temperature was -7 to 3 degree. 50 birds of 9 species were observed.

1967 Christmas Count

	On Refuge	Off Refuge	
Blue Jay	2	Mallard	3
W-b Nuthatch	3	Pintail	1
English Sparrow	10	Gray Partridge	11
B-c Chickadee	6		15
Magpie	9		
Hairy Woodpecker	5		
	35		

Also seen during count period were Sharp-tailed grouse and a Snowy Owl.

1967 Arrival Dates

	First Seen	Peak (s)		First Seen	Peak (s)
Pellican	5/24 (20) Buff.L.	75 9/13 L.A.	R-b gull	3/23	
P-b grede	5/11		Frank. gull	4/29	
Cormorants	4/24 (2)	5/20 (10) S.W.L.	Com. Tern	4/30 (2)	
G-b Heron	4/25 (3)		M. Dove	4/4	
B-c n-heron	5/4 (20)		Kingfisher	4/10	
W. Swan	4/14 (8)	200 10/6	Y-s flicker	4/5 L.A.	
Can. goose	3/23 L.A.		B. Swallow	5/9	
W.F. Geese	4/8		P. Martins	5/10 (2)	
Gad	4/2		Crow	3/17	60 4/3 L.A.
Am. widgeon	3/30 L.A.		B. Thrasher	5/18	
Redhead	4/15		Robin		3/30 *
L. Scaup	4/16 (40)		M. Warbler	5/1	
Bufflehead	3/23 (2)		Y. Warbler	5/18	
C. merg.	4/13 (6)		W. Meadowlark	3/23	
Coot	4/4 L.A.		R-w Blackbird	3/29	
Killdeer	4/14		Grackle		100 5/2 L.A.
M. Godwit	5/2 (2) L.A.		Goldfinch	5/28	
Avocet	5/3 (2)				

*flocks in 30

II E. Big Game. Bison. The herd was maintained at status quo during the year. Six calves were born, April 14 - May 1. Five 1966 heifers were Brucellosis vaccinated March 3. Three 1967 calves were vaccinated Nov. 9. Six bulls were butchered during Oct. and Nov. Five carcasses were sold to organizations. One was donated to N.D.V., Fargo, as a museum specimen (see disease section).

Average dressed wt. of three 2 yr. males was 474 lbs., down 28 lbs. from the 1966 average of 502 lbs. (four animals). The difference could well be attributed to the extremely dry 1967 season. However the enclosure grassland was in generally good condition through the summer. The 5 1/2% difference is probably not significant for only 3 and 4 animals compared Minimum weights were the same 456 and 454. Maximum weights (492 and 560) varied 12%.

Grain cubes were made up in the fall for supplemental winter feed. The mixture was 900 lbs. 41% protein concentrate, 75 lbs. mineral, 60 lbs. A & D vitamin, 450 lbs. molassis, 6600 lbs. grain (about 75 bu. corn, 40 bu. oats, 20 bu. barley). The cubes were not eaten with the relish of those made in 1966. Too much corn made them soft and crumbly, cube lengths 1/2" to 1". Cubes containing mainly barley break off at 1" to 2", are hard, and apparently more palatable. The cubes are a great help during animal disposal. Both bison and elk may be shot from a distances under 60 yards while eating cubes.

Elk The year began and ended with 20 elk in the enclosure. Five calves were added. The time of births is not known. The elk herd dispressed before calving and did not regroup as a herd until early fall. The first elk calf seen was June 28. Five cows with calves were observed in mid-July.

Five bulls were removed in Oct.- Nov., 4 yearlings, one 2 yr. old. The 2 yr. old was missed in 1966 due to mal-formed antlers about 5 in. long, growing down beside the head. Its 1967 antlers were the same (may have been the same antlers).

White Tailed Deer The winter population was approximately 15 deer. One fawn was found at the hay feeding area Feb. 24, nearly devoured by predators. It was probably gored by a bison. Five deer, two maled and three females, were removed during Nov. - Dec., donated to N.D. Deaf School, Devils Lake.

An aerial count was flown Jan 16, 68, with Bob Meier, Devils Lake. 16 deer were observed in the enclosure. Assuming 80% seen, the estimated total at present is 20.

A count was also flown at Lake Alice. 80 deer were observed, project to an estimated 110 deer.

II E. 1967 Big Game Disposal

Bison

Butchered		Quantity	Age/sex	Dressed wt.	Receipts
11/24	IOOF, Devils Lake	1/2	1 yr. M	398	$108
	Carrington VFW	1/2			108
11/20	SDSU W.L. Club, Brookings	1	2 yr. M	474	240
11/20	N.D.U., Fargo	1	2 yr. M		N/C
11/2	W.L. Fed, Bottineau	1/2		492	120
	Wolford W.L. Club	1/2			120
	Minot K.C.	1	2 yr. M	456	240
11/24	Minot Gun Club	1/2	1 yr. M	344	96
	Buf. L. Club, Esmond	1/2			96
		6			

Elk

11/21	Lehr W.L. Club	1	1 yr. M	UKN	90
11/21	Fish L. Club, Harlow	1	1 yr. M	UKN	90
10/18	Kensal Methodist Men	1		264	90
11/2	Devils Lake Elks	1		214	90
	Lakota - Warrick W.L. Club	1		222	90
		5			

11/20	John Asby, C/O Skyberg's	1 bison,hd & scalp	5
12/4	E. Willis, Hazelwood, Mo.	1 bison,hd & scalp	5
	N.D. State Parks	5 bison hides	N/C
		2 elk hides	N/C
		Total	1,588.00

II F. Fur Animals. No mink or weasels were observed at Sullys Hill during the year.

Red Fox Three active fox dens were noted in the enclosure during the summer. Red fox pups were seen at two of them. No Red Foxes have been seen at the preserve during the fall or winter. One seen aerial deer census at Lake Alice Jan. 16, 68.

Gray Fox The first Gray Fox in several years was sighted in the enclosure on Dec. 9.

Raccoons continue to be abundant in the area. Gilbert chased five out of his sweetcorn one night. Trash containers in the recreation area were continually tipped during the summer, the contents strewn about.

Fox & Gray squirrels continue in fair numbers despite the look of oak most the last two years. At least 2 or 3 are generally seen on a drive of the tour route.

Rabbits continue to be rare. One Snowshoe and about six cottontails were seen in the area of the preserve during the year. Gilbert saw six jackrabbits near Silver Lake one night in November.

No Norway Rats or sign have been observed at hqs. for many months. The barn was cleaned of old hay etc. during the summer and anti-coagulate poisoning continued for several weeks. Poison had been used for years, but with the harborage present did little more than stablize the population (high). Grain is still stored in the barn.

About six Woodchucks were seen at hqs. during the summer. One appeared to be denning up for the winter under the storage building behind res. #1.

Gilbert found one Little Brown Bat clinging to a screen window in the late fall.

G. Fish. Louis Zieman hauled 300 Fathead minnows from Sheyenne River to Sweetwater Lake.

H. Disease. One of the butchered 2 yr. bull bison was found to have an infection, pus, and adhesion of organs in the ventral postier of the abdomen. Tissues from various organs were taken by U.S.D.A. vet. Gilbertson. No pathogens were found. The infection is thought to be the result of an injury.

Blood samples of all butchered animals were tube tested for Brucellosis. All were negative except on 1 yr. bull, elk, suspect.

III DEVELOPMENT & MAINTENANCE

A. Physical Development. Completed control structure. (See L. Alice).

A considerable amount of work was done remodeling residence # 2. Prior to the work every room, including kitchen & bath, was finished in knotty pine, installed when the house was built. It had become very dark over the years and somewhat depressing for the Nelsons after 16 years, especially in a house surrounded by large trees. Remodeling included sheet rock and painting in the front room and kitchen; reworking and face-lifting w/birch plywood the kitchen cabinets; sheet rock and tile, new stool and lavetory, medicine chest in the bath; misc. light fixtures in the rooms.

Part of the plastic tile in the bath of Res. #1 were falling off. These were replaced. Now the others are coming loose. It appears that ceramic tile would be cheaper in the long run.

The barn was given a thorough cleaning. Manure, junk and old hay were hauled out. The fire pump was used to complete cleaning. Old rat burrows were filled in.

All three picnic shelters were cleaned inside with the fire pump. Dust and cob webs accumulated over 30 years were removed in about 20minutes from each. About 50 small window panes were the target of a BB gun in the late fall. These were replaced by the NYC's in early winter.

An oil furnace was installed in the attic of the office-shop. The old chimney was removed - with some difficulty when we discovered the bottom 5' was reenforced concrete poured against the foundation and imbedded in the ground. A rented jackhammer solved the problem. The space required by the old oil stove and large chimney was badly needed. Insulation of the attic and furnace duct work was done by the NYC's. The interior of the office protion was repainted in June. All wiring was hooked up to the 220v circuit in the south end. The old line and fuse box at the north end were removed. Service and safety are greatly improved.

The goose wintering house was renovated during the summer. It was nearing the point of no repair, with foundation and walls spreading and roof sagging. Each crack in the foundation had formed where the foundation was poured over a large rock. The rocks were removed, foundation and walls forced into place. What Mr. Zieman called concrete "pilasters" were poured to support the foundation in place. Cracks in the floor were cleaned out with the fire unit and poured full of tar to prevent water from freezing in them. Several broken window panes were replaced in early winter.

Part of wiring (220v) in the pumphouse was replaced when a short was noted in the fuse box. The old fuse box included fused on all three wires (including neutral or ground). A fused neutral is illegal under the Nat'l Code - for good reason. Normally, when a fuse blows or is removed the appliance is dead. However if the fuse was on the neutral side the appliance is still hot, merely awaiting something or someone grounded to complete the circuit.

The hqs outhouse was repaired, painted and moved from its jaunty angle in the middle of the yard behind the office. It now stands inconspicuously near the oil house. Several toilets in the rec area were repainted inside.

Our entrance sign and two highway recognition signs were sanded and refinished. Three large rustic signs were constructed and placed at the entrances of the recreation and tour route areas. About 30 small signs and numbered posts were installed along the tour route.

A 12' x 12' cattle guard was constructed at the enclosure entrance.

One of the rock goose nesting islands was built up with additional rock. (Nests were inundated the last two years). An additional island was constructed. The rock was hauled in from M. Jabs farm in the fall. When the ice thickness was about 18" rock was dumped on the ice to about 5'. By the next day the rock had gone thru the ice to the bottom. After ice had refrozen the island was completed to about 5' above the ice.

A wing was added in the circular catch pot of the corral system. It should facilitate getting animals into the chute and reduce safety hazard of this job.

The government power line into the preserve was taken oven and rebuilt by Otter Tail Power Co. The 7.5 kv transformer was replaced with a 15 kv.

Regular clean up of toilets and pick up of trash in the rec area consumed many man hours during the summer. Mowing, however, became unnecessary as the grass was dormant by midsummer. Honeydew on picnic tables and equipment was extremely bad. Again the fire unit was useful; a periodic 2 minute treatment did a pretty good job on tables.

Considerable brushing was done during the summer on corners along the tour route and at intervals along the shore of Sweetwater L. Much dead wood was removed from the rec area during early winter as an NYC project. The firewood was given to a number of old folks in the community.

B. Fires. One small fire occurred in the enclosure. Apparently, just before dark Sep. 2, one of our visitors drove off the trail, drank his beer, pitched cans and cigaret butts out. The fire was put down when discovered in the a.m., about ½ acre burned. The fire smoldered unknown in roots under the very dry ground until Sep. 6, when strong wind brought it to life, burning another 4½ acres. The manager stayed up most of that night putting down outbreaks that occurred in the 25-30 mph wind. The fire was finally extinguished when each pocket of fire along the periphery was blown open to the bottom (often over 1' under ground) using 400 lbs pressure on the fire unit. Previous soakings merely delayed burning until the heat dryed the water and the wind came up. Time and equipment costs (incl. one BIA employee, contributed) were $147.00.

Refuge personnel assisted BIA in fighting many other fires adjacent to the preserve. Fortunately the woods never got quite dry enough for fires to "crown". Fires would race uncontrollable through the tall grass in clearings, leap to the crowns of the first tier of oaks (your heart stops!), then settle to a slow meander on the woods floor. Being inaccessible with vehicles and impossible to completely extinguish with back packs and "flappers", the same fires were fought several times until a ½" rain on Sep. 12 ended the fire season.

IV RESOURCE MANAGEMENT

A. Grazing. Our one 160 acre unit was used by M. Jabs for 100 AUM's during the period from Jul. 1 - Oct. 31. The fee was $2.07/AUM. The unit is in poor shape with species composition primarily bluegrass and Buckbrush. Renovation by native interseeding with a grassland drill and retirement from grazing is planned.

B. Haying. Hay was harvested on 299 acres, producing 209 tons. Six acres (27 T) of meadow near hqs was cut by J. Jabs at $3.50/T. This strip of rank Quack grass is cut for fire protection.

Hay in units I & II was cut by share permittees. The preserve share (1/3) was hauled to the corral by permittees. No second cutting was possible. Most of the alfalfa and Brome became dormant in late summer.

Unit I, 80 acres of alfalfa-Brome, was put up by H. Belcher. Yield was 42 Ton (6 stks). H. Oram and D. DeVany put up Unit II, 213 acres of various species. Yield was 140 T (20 stks). The preserve share of 2 stks was sold to DeVany at $12.50/T.

What little alfalfa continued to grow during the summer (Unit II) was combined for seed by H. Jabs. The refuge share after cleaning was 660 lbs.

C. Farming. 30 acres in the NE corner of Unit II was seeded to oats by the permittees. Seed, field work, delivery of refuge 1/3 share (300 bu) to hqs storage was provided by permittees.

D. Fur Harvest. None at Sullys Hill. (See easement section).

V PUBLIC RELATIONS

A. Recreational Uses. User fees, first adopted in 1966, were dropped in 1967. In addition, a self guided auto tour was opened through the enclosure. The resulting surge in visitor numbers was greater than reflected by visitor estimates for the two years. We believe the 1967 tally of 20,500 visits (2800 12 hr. days) is quite accurate. The 1966 estimate was 11,600 (4,300 12 hr. days). The 1966 conversion rate to 12 hr. days was higher; people would not pay the fee for a short stay.

B. Refuge Visitors. R.O. engineers Dick Johnston and Clark Wingard were regular visitors during the construction work at L. Alice. Also occasionally stopping were Devils L. Wetlands personnel Don Perkuchin, Vic Hall, Jim Heinecke, and GMA Vic Blazevic.

O.E.O. Director Archie Borstad and NYC Supervisor Bill Cavanaugh were in frequently regarding the NYC program. B.I.A. personnel Wayne Trottier and Ron Thurman stopped occasionally. Equipment items were often borrowed between the agencies. U.S.D.A. Veterinarian Ward Gilbertson vaccinated bison calves, conducted inspection of butcher animals.

Refuge permittees Marvin Jabs, Howard Jabs, Harold Belcher, Donald DeVany, Hilmer Oram were in frequently on economic use items.

Other visitors

Date	Name	Purpose
2/28	Ray Wright, R.O. Eng.	L. Alice, inspection, structure
3/13	Duane Moen, Devils L.	Employment opportunities
3/14	Fred Roe, B.I.A.	"
4/20	M. Beaudry, R.O.	Recreational development
4/25	Mr. Marsley, B.I.A.	Road easement, widen along unit II
5/23	John Umberger, R.O. Eng.	L. Alice, inspection.
5/24	John Winship, R.O. Pilot	Pair counts on easements
6/6	Mr. Marsley, B.I.A.	Easement
6/15	Ed Talbert, L. Reg. Sheet Mtl.	Furnace bid
6/16	Wm. McClure, USGMA	Dove banding, enforcement
	Mr. Spitzer, N.D. Warden	"
6/17	M & E Sheet Metal	Furnace bid
6/20	Wm Pfiefer, W.L. Services	Predator control on easements
7/25	John Winship, R.O. Pilot-	Brood counts on easements
6/27	Merrill Hammond, Area Biol.	W.L. Inventory Plan
6/26	John Bauman, BSFW	Excess property
7/6	Harold Boardman, Kensal	Animal disposal
7/12	John Elsperger, L. Alice	Inlet channel
7/19	Edwin Kjelstrom, Rugby	Civil Defense

Other Visitors

Date	Name	Purpose
7/22	Russ Dushinske, D.L.Journal	Sullys Hill feature
8/2	Warren Halvorson, WDAZ-TV	Photos in enclosure
8/8 - 9	Merrill Hammond	Broods & botulism check w/catagator
8/9	Fred Kurtz, John Tebilius	Buffalo Lake easement information
8/22	Glen Sherwood, Gary Pearson	Pickup geese, botulism check, L.Alice
9/12	Don Noltimeier	Econ use, L. Alice
9/28 - 10/1	Ralph Fries, Coleharbor	Enforcement
10/4-5	Dick Johnston, Ray Wright	L.Alice structure, final inspection
10/6-8	Dave McGlauchlen,Coleharbor	L.Alice structure, final inspection
10/29	Noble Buell, Rob't Fielding, Forest Carpenter, B.Rounds	Inspection of easements, WPA's
11/1	Clair Rollings, R.O.	Land use

C. Refuge Participation. Gilbert served as "Lion Tamer" in the Devils Lake Lions Club. Nelson was "Noble Grand" of the Devils Lake I.O.O.F. lodge. These associations offer frequent opportunities to discuss our programs with the groups, or more often, with individuals of the groups.

The station manager and the BIA Superintendent are automatically members of the "Fort Totten - Sullys Hill Ass'n", composed mainly of Devils Lake residents. The group meets in the spring to discuss summer plans for the preserve, Fort Totten State Park (the old fort), Historical Society, Pioneer Daughters, Devils Lake Sioux Tribe, etc. Surprisingly, the group is not the usual commercial pressure group, but is interested in the cultural and asthetic development of the community.

On Fridays during the winter, Gilbert met with other Fort Totten community leaders for informal noon lunch at the Episcopal Mission Church.

Gilbert attended periodic inter-agency meetings at BIA headquarters (BIA, PHS, HEW, OEO, BSF&W).

Numerous wildlife movies were ordered for showing at the Fort Totten School during the year.

Refuge families participate in Community Get-togethers periodically held at the school (welcome or farewell potlucks, 4-H or Scout benefit, basketball, etc.). Gilbert is a trustee in a Devils Lake church and belongs to a couples club in the church.

Often visitors were accompanied on the tour, if they requested and time permited (usually evenings and weedends).

Other Participation

Date	Personnel			
2/21	Gilbert	NPWRC, Jamestown	Attend enforcement workshop	
3/6-9	Gilbert	Ft.Niobrara NWR	Attend big game conference	
4/3	Gilbert	Lions Club, D.Lake	Sullys Hill summer plans	(20)
4/4	Gilbert	Towner Co. Comm.	Tractor rental at Lake Alice	
5/6	Gilbert	Fort Totten-Sullys Hill	Sullys Hill sumer plans	(50)
5/8	Gilbert	NPWRC, Jamestown	Attend Wildlife Extension meeting	
5/10	Gilbert	Co. Comm, Chm.Twp.Bd	Repair of road-dam at L.Ardoch	
5/13	Gilbert	John Elsperger	Water mgmt, Lake Alice	
5/19	Gilbert	Sullys Hill	Tour, Deaf School faculty	(30)
5/25	Gilbert	Bisbee Wildlife Club	Perch stocking at Snyder Lake	
6/3	Gilbert	Howard, Dressen, Arden Helgeseth	Dredging at Silver Lake	
6/12	Gilbert	Sullys Hill	Guided tour	(15)
6/24	All	Sullys Hill	Refuge picnic	
7/20	Gilbert	Roy Cowan, Elmer Anderson	Inlet channel dredging, L.Alice	
8/12-13	Gilbert	Medora, N.D.	Attend N.D. Wildlife Soc. mtg	
8/30	Gilbert	Sullys Hill	Tour, Home mgmt group	(15)
9/14	Gilbert	John & Bob Elsperger	Discussed inlet channel, posting Lake Alice	
9/19	Gilbert	Chain Lakes Water Board	Inlet channel dredging, L.Alice	
10/4	Gilbert	Benson Co. Comm.	Delivered revenue-sharing check	
10/17	Gilbert	Sullys Hill	Tour, Fort Totten grade school	(25)
10/17	Gilbert	Sullys Hill	Tour, Devils Lake kindergarten	(15)
11/13	Gilbert	NYC, Fort Totten	Talk, movie	(12)
11/22	Gilbert	NYC, Fort Totten	Talk, movie	(20)
11/27	Gilbert	Leeds Wildlife Club	Talk, Mauvais Coulee water mgmt	(40)
12/10	Gilbert	Sullys Hill	Tour, Leeds Boy Scouts	(5)

D. Violations. Four apprehensions were made by refuge personnel during the year. We do not have file records of other apprehensions by State and GMA personnel at the easement refuges.

Violations

Name	Violation	Plea	Sentence
Taylor, Stanley G. Fargo, N.D.	Goose overlimit, Sibley Lake NWR	G	$50 fine
Rorvig, Carl A. Fargo, N.D.	Goose overlimit, Sibley Lake NWR	G	$50 fine
Nelson, Roger A. Cooperstown,N.D.	Unplugged gun, Sibley Lake NWR	G	$15 fine
Taylor, Alfred L. Fort Totten, N.D.	Littering, Sullys Hill NGP	Released w/warning	

F. Safety. Formal safety meetings were not held during the year. NYC personnel were changing almost daily during the summer. Informal safety meetings were frequent. Safety aspects of each new activity were discussed with the crew. The importance of stressing safety was emphasized in staff planning sessions.

Credit for our accident free year is in large part due to the continuous safety consciousness exhibited by DeHaven and Nelson in supervising the NYC's. Considering the attitudes of some of the boys, there was also an element of good luck. An NYC trainee was once observed whirling about on a single rope swing, wielding an axe!

Manager Gilbert suffered one minor off duty accident during the fall. When opening the tour route gate one Sunday morning he slipped through the cattle guard. The pipes were spaced just right to allow his dress boot to pass but not his knobby knee! "No slip" strips are on hand to be added to the pipes when weather permits.

VII. OTHER ITEMS

A. Items of Interest. Irvin Nelson was promoted to Biological Technician (Wildlife) in December, after serving the station as Maintenanceman since coming with the Bureau in 1950. Irvin deserves congratulations on his promotion.

Richard DeHaven, our summer Wildlife Aid, was from Pueblo, Colorado, a graduate of CSU. He was eager to learn about all aspects of the project and did a fine job during the summer.

The refuge has cooperated with the local O.E.O office in using Neighborhood Yough Corps (NYC) boys on various projects. Local 16 - 21 year youths live at home and are assigned to work on tax supported projects in the area. The program is administered in North Dakota by State Parks. The youths are paid $1.40 per hour for a 32 hour week, funded through O.E.O. For most of the year, boys were assigned daily to various projects, allowing no continuity of training, experience, or development of interest in any project. Attendance and tardy records were abominable.

In December, four boys were assigned regularly to Sullys Hill, reporting and responsible to us. This has worked much better. Three of them, Phillip and Ignatius Jackson, Gerald Longi, are still with us, and have done considerable work during the winter. They have shown interest in the project and dependability records have been fair to good. Presently, they are constructing metal wood duck boxes for distribution by NPWRC. They have about 40 near completion so far. Mrs. Phillip (Mary) Jackson has recently been assigned to us as an office assistant under the NYC program.

B. Credits

Mary Jackson. . . .Part of typing, photo mounting

Irvin Nelson. . . .N. R. forms

David Gilbert . . .Write up of report, assembly

Photos - as indicated. Un-numbered photos taken with personal equipment.

NORTH DAKOTA EASEMENT REFUGE DISTRICT # 2

Lake Alice 4 (Lac Aux Mortes)	Pleasant Lake 7
Buffalo Lake 2	Rock Lake 8
Brumba Lake 1	Sibley Lake 9
Johnson Lake 3	Silver Lake 10
Lamb's Lake 5	Snyder Lake 11
Little Goose Lake 6	Wood Lake Marsh 12

Lake Alice

Water. No control was possible during the year due to construction of outlet structure. Coffers were removed April 6 to allow passage of spring floodwaters, and replaced September 6. When the structure became operational (September 15) Lake Alice and Irvine were level. Two radial gates were left open during the winter. Water level became very low (1441' MSL) during the late summer. Normal operating level is 1442.5. The level in both Lakes at freezeup was 1440.3

The new outlet structure consists of four 14' x 6' radial gates and two 7' x 3' roller gates mounted above stub walls. The floor of the structure is 1437.5, top of gates 1443.5'. Our water right level is 1443'.

A channel about 25' wide was cut in the east bank, without our knowledge, by the Chain Lakes Water Board. It passed excess water from Sweetwater-Dry Lake into Lake Alice. The channel is still open.

Waterfowl. (See Sullys Hill report)

Botulism. With the low water levels of late summer a botulism outbreak was feared. Our fears were confirmed on August 8, when one mile of shoreline (from outlet channel south) was checked by walking and Catagator marsh vehicle. Losses were also noted on eastern shore of the lake. Total loss of ducks was projected to an estimated 4 - 5,000. Few affected birds were noted, indicating the outbreak was then on the decline. Serum collections taken August 23 confirmed the presence of clostridium botulinum, type C toxin.

Losses noted in one mile of Lake Alice shoreline:

Mallard	18	Coot	7
Gadwall	8	P-b grebe	3
Pintail	39	S. rail	5
BWT	27	Shorebird	1
GWT	25		
Shoveler	19		16
Baldpate	14		
Redbead	1	6 small dead toads together on	
Ruddy	3	a muskrat feeding platform.	
Unid	64		
1a ducklings	2		
	220		

Breeding Pairs and Lone Males. (Ducks)

	1963 (5/16)	1964 (5/25)	1965 (5/19)	1966 (5/17)	1967 (5/24)
Lake Alice	419	424	229	161	142
Brumba Lake	37	28	23	23	24
Buffalo Lake	64	76	36	38	17
Johnson Lake	142	51	55	49	52
Lambs Lake	29	21	26	27	44
Little Goose Lake	16	18	9	6	10
Pleasant Lake	136	71	31	51	13
Rock Lake	154	99	102	151	124
Sibley Lake	104	55	67	57	44
Silver Lake	185	71	30	56	65
Snyder Lake	87	38	59	85	22
Wood Lake Marsh	17	10	9	4	1
	1390	962	676	708	625

Total Coots.

	1963	1964	1965	1966	1967
Lake Alice	335	60	940	256	280
Brumba Lake	40	8	12	23	9
Buffalo Lake	7	19	30	10	5
Johnson Lake	76	2	24	2	29
Lambs Lake	--	1	48	31	30
Little Goose Lake	20	--	8	2	9
Pleasant Lake	93	3	120	13	7
Rock Lake	--	3	318	42	130
Sibley Lake	50	--	32	34	182
Silver Lake	25	45	16	17	98
Snyder Lake	--	24	90	14	4
Wood Lake Marsh	--	--	2	--	1
	646	165	1640	444	784

Aerial Brood Census.

	1963	1964	1965	1966	1967
Lake Alice	65	40	58	73	90
Brumba Lake	9	8	3	3(partial)	3
Buffalo Lake	19	17	7	18	14
Johnson Lake	33	19	4	18	12
Lambs Lake	3	8	4	22	7
Little Goose Lake	1	4	--	3	--
Pleasant Lake	24	9	8	3	7
Rock Lake	24	18	13	21	23
Sibley Lake	30	10	5	46	16
Silver Lake	9	3	7	9	14
Snyder Lake	15	4	5	18	10
Wood Lake Marsh	3	2	2	1	1
	235	142	116	235	197

On August 8 and 9, the catagator marsh vehicle was used to count broods on Pleasant Lake and Silver Lake Refuges. The two areas are very similar-roughly 400 acres, open water, partially wooded shores. Pleasant Lake has a relatively narrow bank of emergents in water (wide bank of Phragmites, etc. is dry). The NW 1/3 of Silver Lake has a wide band of emergents, w/one to 2 feet of water, and numerous small openings throughout. Even without the wind, counts on this 50 - 100 yard bank would be less complete than Pleasant Lake.

Silver Lake - August 8, 6:15 p.m., wind N.W. 20 miles per hour
Broods seen (total shore) - 10 July 25 aerial count - 7

Pleasant Lake - August 9, 8:15 a.m., calm
Broods seen (1/3 of shore) - 12, expanded to total shore - 36, aerial count - 14.

Buffalo Lake. A cooperative project (not involving BSF&W) was begun, to raise the lake level. The State Game and Fish Department and Buffalo Lake Sportsman's Club are involved. Other details are unknown.

Silver Lake. Prior to opening the Lake Irvine gates the State Water Commission dredged out the coulee below Lake Irvine. The work began on Silver Lake Refuge, on land belonging to Arden Helgeseth, and continued north to Lake Irvine. Howard Dressen (farmer in Silver Lake NWR) called the manager Friday evening, June 2, reported equipment being moved in. Gilbert went to site in a.m., Helgeseth showed the unsigned easement, asked what could be done. Gilbert stopped the dragline, called the contractor, who said he would move north off refuge until after the week-end. Instead, the work was continued thru the refuge and Helgeseth's land over the week-end.

Snyder Lake. One thousand five hundred adult y. perch were stocked by the Bisbee Wildlife Club, May 26. They were removed by the State from Lake Ashtabula, and hauled in stock tanks. We have no report on the fishing.

Easement Refuge Fur Trapping. Fur permits are issued to persons having permission from one of the landowners in the refuge. Seventeen permits were issued, eight did not trap because of very low fur prices. One did not report. Most did not report prices obtained. It appears 'rats brought under 50¢. Lious Zieman reported averages: mink, F., $9, M. 26; Fox (stretched) $7+, top fox price $11. These are probably the best prices received by anyone around.

Furbearers reported:

	Trappers	Muskrat	Mink	Beaver	R. Fox	Raccoon	Skunk	Badger
Lake Alice	(1)	11						
Buffalo Lake	(1)	58	2			3	8	
Johnson Lake	(3)	29						
Rock Lake	(2)	30	3	3	2	2	8	1
Wood Lake Marsh	(1)	51	4		3			
	(8)	179	9	3	5	5	16	1

Submitted by:

March 15, 1968

David L. Gilbert
Refuge Manager

Approved, Regional Office:

Date: MAR 18 1968

Edward J. Smith

Asst. Regional Refuge Supervisor

L. to R. Louie Zieman, Carpenter-painter, Richard DeHaven, W.L. Aid, Irvin Nelson. 9/67-10 Gilbert

at right
Nelson, receives congratulations from Gilbert on promotion to Wildlife Techician.
12/67-9 Mrs. Gilbert

(photo - 12/67-8 Gilbert)

Project of the year was opening the self-guided tour thru the enclosure. The STOP plank had to be added. Few paused to read our one regulatory sign. The PLEASE sign was borrowed from a similar idea at Seney NWR. Littering was no problem until late summer when reservation residents began using the area. Much of the litter was wine bottles. These people litter their yards, too. Gilbert

Sign design and construction was a team effort at the station. Gilbert

Originally on the tour entrance sign, the guide box had to be moved down the trail 50 yds. Only about half the visitors saw it. 10/67-10 Gilbert

Points of interest were numbered and discussed in the tour guide. Trees along the trail were identified. 8/67-12 DeHaven

Zieman and NYC's (Neighborhood Youth Corps) on construction of 12' x 12' cattle-guard. 8/67-6 Gilbert

The rec area is well developed w/3 shelters, 50 tables, hydrants, playground equipment. 10/67-6 Gilbert

Steep grades on trail posed problems when some tried to pull their big trailers. Guess we need still another sign. 5/67-2 Gilbert

A vista turnout added on bluff at right of photo at left provided a view of Devils Lake
9/67-6 DeHaven

4 - 5,000 visitors crowed the area during the climax day of the Fort Totten centennial. Aerial car counts indicated 16-20,000 at the Fort.
9/67-1 DeHaven

The rec area was packed . . .
9/67-3 DeHaven

And overflowed into the enclosure along the tour route. 9/67-5 Gilbert

Gilbert joined community residents in raising a few months of whiskers for the centennial. 9/67-8 Nelson

Our 6 new bison got a cold reception into the world, May 2.
6/67-8 Gilbert

Our summer herd totaled 34 bison. Sullys Hill in background.
10/67-5 Gilbert

Our biggest bull (10yr Picture of a picture by Glen Sherwood Gilbert
(N. Prairie W.R.C.).

The usually wary elk become accustomed to the tractor which dispenses grain cubes and hay. Gilbert

The winter elk herd totals 20 animals, two mature bulls.
Gilbert

Gilbert

The elk hang around the edge of the feeding area, taking what the bison let them have. 1/68-8 Nelson

The captive goose flock was released from the hgs pen on 3/29. Happy to be out, they know where to go!
3/67-5 Gilbert

Goose nesting islands are visible thru one of several openings cut in the brush surrounding Sweetwater L. during the summer. 10/67-12 Gilbert

Two broods (10 goslings) were raised. 7/67-12 Gilbert

Accustomed to people, one family begs for potato chips from picnicers.
7/67-5 Gilbert

Our new 150 gal. Dri-Bak remained in the truck during late summer. A supplemental use of the 400 psi unit was in clean up of outbuildings. With a little detergent it did a good job in very little time. 8/67-9 DeHaven

NYC youths Gerald Longie, Philip Jackson, Ignatius Jackson have been the mainstay of our NYC work program this winter, cutting dead wood, replacing many panes in shelters, insulating shop attic and furnace duct work, and presently constructing metal wood duck boxes for N. Prairie Research Ctr. About 20 other youths came and went during the year, making a good traing program difficult. Gilbert

Irvin Nelson and the Jackson Bros. put finishing touches on a new truck bed. Much of Irvin's time is spent on supervising the boys. He deserves much credit for our accident free year 1/68-6 Gilbert

The Bisbee Wildlife Club stocked 1500 perch in Snyder Lake removed from L. Ashtubula by the State.
8/67-3 Gilbert

This channel in the east bank of L. Alice was put in by the Water Board without our knowledge in July. Turns out it's legal as long as water flows in, not out. 8/67-8 Gilbert

Work on a new structure at L. Alice continued all winter, pouring concrete when zero or above. The work was begun in Sept. 66. 1/67-9 Gilbert

Housing and form insulating make winter concreting an inefficient operation. Control of water in mix posed very difficult problems. Moisture content of variably heated aggregate was constantly changing. 1/67-5 Gilbert

Often it was necessary to walk the mile into the jobsite. The road was opened for pouring, but refilled with the first 10-15 mph wind.
1/67-10 Gilbert

The coming of spring didn't help.
2/67-6 Gilbert

Work was terminated suddenly Mar. 27 when runoff between the coffers put 2 feet of water over the structure floor before the day ended. Debris was left to clog the boys.
2/67-10 Gilbert

Flow in Mauvais Coulee was bringing Lake Alice up fast, near the level of our water right. The coffers would have to go. The tractor could only scrape loose dirt off the top, the rest was frozen. (Apr. 6) 4/67-2 Gilbert

AN/FO was use to blow the coffers out. 4/67-4 Gilbert

With coffers removed the refuge boat was brought in to clear debris from structure bays. Junk, scaffolds, even propane burners had to be retrieved from the 5' of water.
4/67-5 Gilbert

Work was resumed in Aug. and substantually completed in Sept. Frozen ground and ice was found in one place during dirt work Sept. 13. Material was probably -20 or 30 when buried by dozer in the winter. When struck in Sept. it was still so hard the dozer bypassed it for a day or so!
(10/5) 11/67-7 Gilbert

Engineers Ray Wright and Dick Johnston (right) on final inspection.
Several items remain for the contractor this spring. (Oct. 5)
11/67-8 Gilbert

Old fort portion of Fort Totten at left, Sully's Hill at center, Devil's Lake at upper left. 1/68-2 Gilbert

Partially completed structure at outlet of Lake Alice.
Contractor didn't think the water would reach the
equipment trailer. May 67 Winship.

MAY 1967

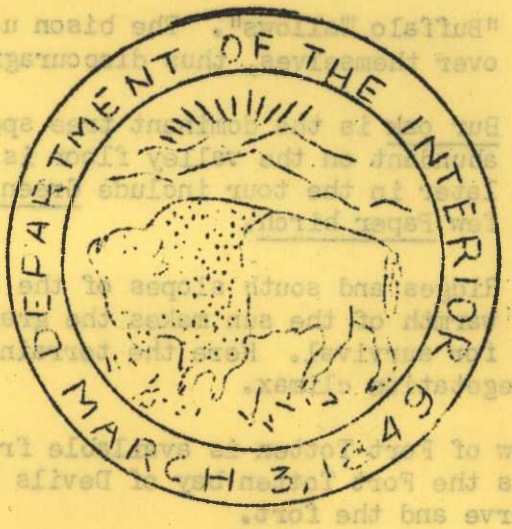
001769-1

Devils Lake
Journal
7/28/67

View From The Sully's Hill Park Overlook

From the overlook on the new scenic drive at Sully's Hill National Game Preserve, refuge manager Dave Gilbert looks over Devils Lake and miles of territory. The four-mile drive, opened this year, is the new self-guided tour in which motorlists find a numbered guide sheet at the start and can follow the natural wonders in the park, including ducks and geese in the picnic area lake, buffalo, elk, deer and other wildlife. The 1,674-acre preserve, established in 1904 as a national park, became a preserve in 1914 with the addition of big game animals. The wintering population of bison, introduced in 1918, was 28 and six calves have been added. The elk herd numbered 20 during the winter and there are six calves. White-tailed deer, which normally keep out of sight, number 15. Clay for the buildings at Fort Totten was excavated and kilned on the north slope of Sully's hill shortly after the log fort was completed. Var-

by John Frazier. Other Park pictures on page 5)



WELCOME TO

SULLY'S HILL

NATIONAL GAME PRESERVE

SCENIC TOUR ROUTE

The route is about 4 miles long - 20 minutes driving time at 15MPH. Take your time; a lone deer in the woods may be hard to spot.

Both ELK and BISON MAY BE DANGEROUS. Two persons were once "treed" by one of our elk bulls for over an hour. Bison owners have been gored by even "domesticated" buffalo.

Additional information on the preserve and the big game species begins on page 3.

1 Patches of Buckbrush invading the meadows are clipped a 4 to 6 year intervals. Mowing is preferred to herbicide application because it allows other forbs to persist. Many of these forbs are desirable as animal feed; and the nitrogen fixing legumes replentish soil fertility. Herbicides used in brush control kill all broadleaf plants

Plant species change continuously on any site, but through the years tend toward a "climax", determined by factors of soil, climate, and terrain. Normal plant progression on bare soil in this area would be: annual weeds replaced by perenniel forbs and grasses brush trees (climax vegetation). Most of man's land use activities are efforts to halt this progression at some point suiting his needs.

2 Potholes fill from local runoff in the spring, providing water for animals and breeding habitat for a few pairs of ducks. A pair of Mallards used this pothole this spring. Waterfowl favor the isolation during their courtship, and may not breed unless it can be found. By the time nesting is completed the pothole is usually dry. The drake has gone to a larger marsh for his molt, and the female also will march her brood to other water for rearing and her molt. All the waterfowl molt their primary flight feathers for about a 4 week period in the early summer, seeking a marsh large enough for protection, feeding on seed of pondweeds and other plants. During this flightless period the drakes enter an "eclipse" plumage, appearing much the same as the drab colored females.

3 "Buffalo Wallows". The bison use their front feet to paw the dust over themselves, thus discouraging flies and other insect pests.

4 Bur oak is the dominant tree species on the higher elevations. Most abundant on the valley floor is Basswood. Other species pointed out later in the tour include Green ash, Boxelder, Aspen, American elm, and a few Paper birch.

5 Ridges and south slopes of the hills are generally bare of trees. The warmth of the sun makes the grasses better competitors in the struggle for survival. Here the terrain feature "aspect of slope" is influencing the vegetation climax.

A view of Fort Totten is available from the knoll on the left. In the late 1800's the Fort Totten bay of Devils Lake filled the valley between the preserve and the fort.

6 Devil's Lake Vista. The city of Devils Lake is visible across the lake. The lake has gone down about 30 feet during the past 100 years, apparently due to climatic changes. Under the proposed irrigation diversion from Lake Sakakawea (100 miles west), water will feed into Devils Lake, raising it 15 to 20 feet above its present level.

7 Most of the trees presently growing in this valley are secondary growth, characterized by multiple trunks arising from stumps. Logs for the original Fort Totten were harvested here in 1867. This fort stood on the hill near the Dakota Trading Post. Part of the area was again logged in the 1930's by the CCC's.

8 Clay for the present fort was excavated and kilned here on the north slope of Sullys Hill shortly after the log fort was completed. Lime content of the clay makes it quite erodable, requiring the fort be painted to slow down the deterioration by weather. Barges were used to ferry the bricks across the bay.

9 Whitetail habitat. The shrubs found in ravines and hollows are preferred deer habitat, offering protection and forage. Chokecherry is the dominant shrub species. While bison and elk feed mainly on grasses, the deer feed primatily on browse, eating leaves in summer and twigs in winter. Even when feeds such as corn and alfalfa hay are available, deer require browse as part of their diet.

10 Sullys Hill was named for General Alfred Sully, a U. S. Army officer who led a number of Indian expeditions in the 1860's. After a report of hostile Indians in this area in 1865, General Sully left Fort Rice (on the Missouri, south of Bismarck), planning to meet a detachment of the 3rd Illinois Volunteer Cavalry at Lake Minnewaukan (now Devils Lake). Sully camped at the west edge of the lake (near Minnewaukan), and finding neither hostile Indians nor the cavalry detachment, moved on to the west. The cavalrymen arrived a few days later, named the hill where they expected to meet the general for him, and proceeded west, trying to overtake his troop. Quite likely, General Sully never visited the hill which bears his name. (The foregoing taken from writings of the late Dana Wright, Trustee of the State Historical Society.)

Sullys Hill is the high point of the surrounding area (1735 feet MSL), rising about 330 feet above the surface of Devils Lake. Three burial mounds are located at its summit. (See item 11.)

11 Pre-historic Indian Burial Mounds. The mound to the right is typical of 8 such mounds found in the enclosure. They are thought to be about 600 years old. Similarity of construction indicates a link with the mound builders of New Mexico. These mounds, however, have a log rather than stone tomb, covered with earth. The logs have long since collapsed, leaving the characteristic depression in the top of the mound. Little is known of these people and how they may relate to historic tribes.

12 Corral. The corral is used primarily for Brucellosis vaccinating of bison calves. The herd is lured into the corral with grain-molasses cubes used as supplemental winter feed. Hay for winter feeding is cut on another part of the preserve by local operators, who receive a share of the hay harvest. On areas of sufficient grass acreage hay feeding is not necessary. Native grasses "cure on the stem", retaining much of their nutrient value.

Sullys Hill National Game Preserve was established in 1904 as a National Park. It became a game preserve in 1914 with the addition of the big game animals. The preserve contains 1674 acres, 700 of which is big game enclosure. Herd reductions on Bison, Elk, and White-tailed deer are carried out each fall to keep populations in balance with the carrying capacity of the range. Surplus animals (usually equal to the calf crop) are removed and sold to service and wildlife clubs. Deer are donated to the Fort Totten Indian School and the North Dakota School for the Deaf in Devils Lake.

American Bison. At one time an estimated 60 million buffalo roamed the Great Plains. After the exploitation of the frontier days they declined to possibly 200 animals! Now the bison is well out of danger of extinction, with approximately 20,000 in public and private ownership.

Six bison were brought to Sully's Hill from Oregon in 1918. Since then, breeding bulls have been added occasionally from Nebraska and Montana. The wintering population this year was 28. Six calves were born in late April. Bison breed in the late summer of their second year, calving at 3 years old and annually thereafter. We have two breeding age bulls in our herd, 3 and 9 years old. Mature bulls weigh 1500 pounds to over a ton. Cows range in age to about 12 years. Age is generally indicated by the extent of curving in the horns and the number of rings at their base.

Elk. Once common throughout the Midwest, the elk has long since disappeared from the plains region. Our herd began in 1917, when 15 elk were received from Yellowstone National Park. Elk reach breeding age at the end of their first year, calving at 2 years. They are a member of the deer family, with only the males having antlers, which are shed each year in the early spring. Elk are readily distinguishable from the deer by their large size (mature bulls weigh about 700 pounds), massive antlers on the bulls, large buffy rump patches, and their tendancy to herd up. Our herd numbered 20 during the winter, with three breeding age bulls, 2, 4, and about 7 years old.

White- tailed Deer. The wintering population of deer was estimated at 15. Unlike the bison and elk, the deer do not normally herd up, but usually remain dispersed singly or in small groups. The bucks shed their antlers in December or January. Antler size in deer and elk is only a general indication of age. The la rgest "racks" occur during the animal's strongest years, about 6 to 8. Mature bucks weigh about 200 pounds. Twin fawns, rare in elk, are normal in deer. When a deer is alerted it throws its tail up, exposing the white "flag" of fur on its underside. The deer may also stamp the ground with its front foot as a danger signal.

The deer have adapted well to the advance of civilation. In many areas, where adequate cover is still available, they are more plentiful now than in the days before settlement. Tree plantings and secondary growth after timber cutting provide more accessible browse than original stands of mature trees.

Sully's Hill National Game Preserve

Fort Totten, North Dakota

3-1750
Form N[illegible]
(Rev. March 1953)

WATERFOWL

REFUGE Sullys Hill National Game Preserve MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant			NO WATERFOWL DISEASE							
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

Int. Dup. Sec.,
Wash., D. C. 37944

3 -1750
Cont. Nk-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Sullys Hill NGP MONTHS OF January TO April, 19 67

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling						8			56		
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard					4	12	12	12	280		
Black											
Gadwall											
Baldpate											
Pintail							4	2	42		
Green-winged teal											
Blue-winged teal								2	14		
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup						30	4		238		
Goldeneye											
Bufflehead							8		56		
Ruddy											
Other											
Amer. Merganser							3	7	70		
Coot:											

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	56	8	
Geese			
Ducks	703	42	
Coots			

SUMMARY

Principal feeding areas Sweetwater Lake and flooded hay meadow.

Principal nesting areas

Reported by Irvin Nelson

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

16242

3-1750
Form N[illegible]
(Rev. March 1953)

WATERFOWL

REFUGE Sullys Hill NGP MONTHS OF May TO Aug, 1967

(1) Species	(2) Weeks of reporting period: 5/6 (1)	13 (2)	20 (3)	27 (4)	6/3 (5)	10 (6)	17 (7)	24 (8)	7/1 (9)	8 (10)
Swans:										
Whistling				16						
Trumpeter										
Geese:										
Canada	25	25	25	35	35	35	35	35	35	35
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	24	12	20	21	21	8	16	37	46	32
Black										
Gadwall	10	10	8	20	7	10	2	2	8	4
Baldpate	20	20	4	8	2			1	2	2
Pintail		10	4							
Green-winged teal	2	8								
Blue-winged teal	44	62	20	14	10	7	5	5	4	35
Cinnamon teal										
Shoveler	28	30		10		6	1	2		
Wood				1	1					
Redhead				12	3					
Ring-necked										
Canvasback	15	6			2					
Scaup	380	400	26	20	2		2			
Goldeneye										
Bufflehead										
Ruddy		200	60	60						
Other										
. Merganser	8	4								
Coot:	6			20						

Int. Dup. Sec.,
Wash., D. C. 37944

3 -1750
Cont. NK-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Sully's Hill NGP MONTHS OF May TO Aug , 19 67

(1) Species	(2) Weeks of reporting period 7/15 11	22 12	29 13	8/5 14	12 15	19 16	26 17	9/2 18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada	35	35	35	35	35	35	35	35	4200	2	10
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	86	17	34	34	224	267	428	428	12,000	5	40
Black											
Gadwall	3			1	100	100			2000		
Baldpate			15		75	250	500	600	10,500		
Pintail					100	150	100	150	6000		
Green-winged teal					50-	100	100	50	2000		
Blue-winged teal	12	11	10	43	150	100	100	100	5000	2	13
Cinnamon teal											
Shoveler	2			1	25	25	25	11	1200		
Wood									100		
Redhead			5	6				2	200	1	2
Ring-necked											
Canvasback			3						200		
Scaup									6000		
Goldeneye											
Bufflehead											
Ruddy	9	7	35	35	100	150	150	200	7000		
Other											
Coot:							100	950	3500		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	100	16	-
Geese	4,200	35	10
Ducks	56,000	1700	55
Coots	3,500	350	

SUMMARY

Principal feeding areas Marble Lake

Principal nesting areas Lake shore meadow

Reported by David L. Gilbert

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

16242

3-1750
Form N[illegible]
(Rev. March 1953)

WATERFOWL

REFUGE Sallys Hill Preserve MONTHS OF Sep. TO Dec., 1967

(1) Species	(2) Weeks of reporting period: 9/9 : 1	16 : 2	23 : 3	30 : 4	10/7 : 5	14 : 6	21 : 7	28 : 8	11/4 : 9	11 : 10
Swans:										
Whistling				80	200	200	120	30	30	
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	400	400	800	200	1500	1200	500	1550	430	400
Black										
Gadwall	200	200	200	50	400	250	80	800	100	60
Baldpate		30	200	40	400	200	300	800	100	80
Pintail						20	20	30	10	
Green-winged teal										
Blue-winged teal	100	65	45	20	20					
Cinnamon teal										
Shoveler	10	20	300	100	1000	800	40	1500	1000	200
Wood										
Redhead	2	20	20	80	60	200	600	600		
Ring-necked										
Canvasback		10	40	20	40	40	60	150	150	
Scaup								400	1550	400
Goldeneye										
Bufflehead							100	60		10
Ruddy	250	300	400	400	200	200				
Other										
Coot:	400	400	800	400	350	300	150	40		

Int. Dup. Sec.,
Wash., D. C. 37944

3 -175[illegible]
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Sullys Hill Preserve MONTHS OF Sep. TO Dec., 19 67

(1) Species	(2) Weeks of reporting period: 11/18 (11)	25 (12)	12/2 (13)	9 (14)	16 (15)	23 (16)	30 (17)	(18)	(3) Estimated waterfowl days use	(4) Production: Broods seen	Estimated total
Swans:											
Whistling									4,600		
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	600								55,000		
Black											
Gadwall	20								10,500		
Baldpate	60								15,500		
Pintail									500		
Green-winged teal											
Blue-winged teal									1,750		
Cinnamon teal											
Shoveler	200								31,000		
Wood											
Redhead									11,000		
Ring-necked											
Canvasback									3,000		
Scaup	200								17,900		
Goldeneye											
Bufflehead	20								1,300		
Ruddy											
Other											
Coot:									19,900		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	4400	200	
Geese	-	-	
Ducks	154,000	5,900	
Coots	19,900	800	

SUMMARY

Principal feeding areas Sweetwater Lake & Pla Totten Bay.

Principal nesting areas

Reported by Irvin Nelson

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

16242

3-175?
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sully's Hill National Game Preserve Months of January to April 195 67

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Great blue heron	1	4-26			Still present					3
Double-crested cormorant	10	4-26			Still present					8
II. Shorebirds, Gulls and Terns:										
Ring-billed gull	1	3-23			Still present					60
Killdeer	1	4-17			Still present					12

(over)

(1)	(2)		(3)	(4)		(5)			(6)
III. Doves and Pigeons:									
Mourning dove									
White-winged dove	1	4-27		Still present					20
IV. Predaceous Birds:									
Golden eagle									
Duck hawk									
Horned owl									
Magpie									
Raven	20		Year around residents						20
Crow									
[illegible]	1	3-26		Still present					10
Marsh hawk	1	4-3		"	"				1
Red tailed hawk	1	4-6		"	"				2

Reported by.....

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sallys Hill NWR Months of May to Aug. 1967

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
B-c night heron	2	5/14	5	5/5 6/29	present					
G-b heron			3	5/5	"					
D-c cormorant			6	5/24	2	8/18				
Pied grebe	2	5/5	62	7/14	present					
P-b grebe	1	5/11	29	8/31	"					
Com. egret	2	8/16	2	8/18	2	8/18				
B. Kingfisher	2	5/12	2		present					
II. Shorebirds, Gulls and Terns:										
Ring-b gull			100	5/5	present					
Franklin's gull	10	5/12	51	6/29	"					
Com. tern	1	5/30	60	5/5	2	8/10				
Nikl tern			12	6/16	2	8/25				
Killdeer			4	6/16	present					
Avocet	2	5/3	14	5/5	2	5/12				
M. godwit	20	5/5	20	5/5	present					
Ruddy turnstone	30	5/19	30	5/19	12	6/2				
Wil. phalarope	200	7/20	275	7/27	50	8/18				
Semi-p. plover	17	8/4	17	8/4	17	8/4				
Semi-p. sandpiper	30	8/4	125	8/18	present					
Willet	1	8/31	1	8/31	present					
L. yellowlegs	2	5/12	40	7/20	present					

(over)

(1)	(2)	(3)	(4)	(5)	(6)
III. Doves and Pigeons:					
Mourning dove		abundant	present		
White-winged dove					
IV. Predaceous Birds:					
Golden eagle					
Duck hawk					
Horned owl		heard occasionally	present		
Magpie					
Raven					
Crow		common	present		

Reported by David L. Gilbert

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

79858

3-1751.
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Gullys Hill Preserve Months of Sep. to Dec. 195 67

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
P-b grebe	25	9/8	25	9/8	7	9/15				40
Eared grebe			15	9/8	4	9/15				20
G-b heron			3	9/1	1	10/6				5
D-c cormorant			30	10/6	30	10/6				40
A. bittern			7	9/1	3	9/15				10
II. Shorebirds, Gulls and Terns:										
Sem-p sandpiper			19	9/1	12	9/12				25
Willet			1	9/1	1	9/1				2
Killdeer			4	9/8	2	9/15				12
R-b gull			80	10/26	80	10/26				300
Franklin's gull			60	9/8	20	10/20				200
H. godwit			2	9/8	2	9/8				4
L. yellowlegs			12	9/8	12	9/8				30

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove			30	9/14	4	10/26				150
White-winged dove										
IV. Predaceous Birds:										
Golden eagle	1	11/21	1	11/21	1	11/21				1
Duck hawk	2	9/15	2	9/15	2	9/15				2
Horned owl	occasionally heard thru year									8
Magpie			20 year around resident							20
Raven										
Crow			30	10/6	30	10/6				50
Red-t hawk			3	9/1	1	10/6				4
Marsh hawk			2	9/15	2	9/15				6
Bald eagle	2	11/30	2	11/30	2	11/30				2

Reported by Irvin A. Nelson

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Sullys Hill NGP For 12-month period ending August 31, 1967

Reported by David L. Gilbert Title Refuge Manager

(1) Area or Unit Designation	(2) Habitat Type	Acreage		(3) Use-days	(4) Breeding Population	(5) Production
	Crops	30	Ducks	233,000	30	55
	Upland	1470	Geese	10,500	20(captive)	10
	Marsh	15	Swans	5,000		
	Water	160	Coots	27,000		
	Total	1675	Total	275,500	50	65
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			
	Crops		Ducks			
	Upland		Geese			
	Marsh		Swans			
	Water		Coots			
	Total		Total			

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) **Area or Unit:** A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) **Habitat:** Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) **Use-days:** Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) **Breeding Population:** An estimate of the total breeding population of each category of birds for each area or unit.

(5) **Production:** Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
Form R-2
(April 1946)

UPLAND G[illegible] BIRDS

1613

Refuge Sullys Hill National Game Preserve Months of January to April, 194[illegible]

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Total acres-1,671. 700 acres of marsh and timbered pasture. The remainder is open pasture and hayland.								Unknown	None seen
Sharp tail grouse	*	*							6	None seen
Hungarian partridge	*	*							6	None seen

* Only columns applicable to the period covered should be used.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form R-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Sullys Hill NWR Months of May to Aug., 1947

(1) Species.	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring necked pheasant	total acres 1674 700 marsh & timbered pasture. Remainder open pasture & hay land.								0	None seen
S-t grouse	"	160							10	
Gray partridge	"	160							10	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form R-2
(April 1946)

UPLAND G[illegible] BIRDS

1613

Refuge Sallys Hill Preserve Months of Sept. to Dec., 1967

(1) Species * Common Name	(2) Density Cover types, total acreage of habitat	(2) Density Acres per Bird	(3) Young Produced Number broods obs'v'd.	(3) Young Produced Estimated Total	(4) Sex Ratio Percentage	(5) Removals Hunting	(5) Removals For Re-stocking	(5) Removals For Research	(6) Total Estimated number using Refuge	(7) Remarks Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant	Total acres 167. 700 ± marsh and timbered pasture, remainder open pasture & hayland.								4	one seen at hqs.
Bobwhite quail	"	140							12	
Ruffed grouse	"	170							10	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1[illegible]3
Form NR-3
(June 1945)

BI[illegible]GAME

Refuge Sullys Hill Preserve Calendar Year 1967

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
Am. bison	700 A. enclosure. Timber & brush on large rolling hills. Approx. 250 A. grass in meadows & hillsides.	6			6/1							34	28	2 mature males
Elk	"	5			5							25	20	2 mature males
W-t deer	"	8			5/2				1/3			22	17	30 % males

Remarks: /1 One butchered bison w/abdominal adhesions, apparent injury, donated to NDSU as museum specimen.
/2 Deer donated to N.D. Deaf School, Devils Lake.
/3 Nearly consumed when found in feeding area. Probably gored by bison.

Reported by Irvin A. Nelson

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIC: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-870
(Revised 2-5-52)

REPORT ON BIG-GAME ANIMALS

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Refuge: Sullys Hill Preserve Date: Feb. 13, 1968

The following is a report on the changes which have occurred in the number of animals during the period from Jan. 1, 19 67 to Dec. 31, 1967:

Losses and gains	Buffalo	Elk	Deer	Longhorns	Antelope	Sheep
TOTAL Jan. 1, 19 67	28	20	15			
LOSSES - Dead:						
Natural causes						
Accidents			1***			
Sales	5	5				
Donated	1*		5**			
LOSSES - Live:						
Gifts						
Sales						
GAINS:						
Births	6	5	8			
Gifts						
TOTAL Dec. 31, 1967	28	20	17			

REMARKS: * One butchered bison w/infection from injury, to NDSU.
** Deer donated to N.D. Deaf School (Ft. Totten School declined).
*** Found dead in feeding area; probably gored by bison.

Signature: _____
Title: Refuge Manager

Interior - Duplicating Section, Washington, D. C.

Instructions:

This report should be submitted annually for the period ending December 31, or he end of the disposal program, whichever is the later date, but not later than February 28.

State briefly any umusual circumstances regarding the gains and losses in the managed herds.

List below dispositions of live animals only where two or more animals are transferred to one source either by purchase or donation. Give the name of the recipient, the number of animals, whether by sale or donation, the date of transfer, the location to which they are removed, and authorization if a donation.

Designate whether the deer listed are mule deer or white-tail deer.

13211

3-175
Form NA-4
(June 1945)

SMALL M[illegible]ALS

Refuge [illegible] Year ending April 30, 1967

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator * Control	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
Muskrat	30 acres of wetlands including Sweetwater Lake.	3.7												8
Mink	" "	15.0												2
Weasel	1,674 acres of timber and grassland.	418.5												4
Raccoon	" "	139.5												12
Woodchuck	" "	209.2												3
Grey tree squirrel	" "	27.9												60
Fox squirrel	" "	55.8												30
Franklin ground squirrel	" "	83.7												20
Thirteen-lined ground squirrel	" "	41.8												40

* List removals by Predator Animal Hunter

REMARKS:

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-175
Form ...-4
(June 1945)

SMALL M...ALS

Refuge Bubye Hill National Game Preserve Year ending April 30, 1947

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5)
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control *	For Re-stocking	For Re-search	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Population
(Continued) Pocket gopher	1,671 acres of timber and grassland.	55.8												30
Varying hare	" "	111.6												15
Cottontail	" "	83.7												20
Striped skunk	" "	279.0												6
Red fox	" "	279.0												6

* List removals by Predator Animal Hunter

REMARKS:

Reported by _____

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

116007

3-1755
Form [illegible]R-5
607

DISE[illegible]E

Refuge Lac Aux Mortes (Lake Alice) NWR Year 19 67
N. Dak. Easement District #2.

Botulism

Period of outbreak Jul. 15 - Aug. 25

Period of heaviest losses Jul. 25 - Aug 10

Losses:

	Actual Count	Estimated
(a) Waterfowl	220	4000
(b) Shorebirds	1	20
(c) Other coots, rails, grebes	25	500

Number Hospitalized	No. Recovered	% Recovered
(a) Waterfowl		
(b) Shorebirds		
(c) Other		

Areas affected (location and approximate acreage) 3000
Entire lake, primarily shoreline.

Water conditions (average depth of water in sickness areas, reflooding of exposed flats, etc.
Max. pool depth 3.3 ft. Very gradual slope at shore line. Most losses in less than 1.5 Ft. water. 100 yd. band of lake bottom exposed at shore line. Pool lvl continued to decline, but wind fetch would cause reflooding of mud at shore line.

Condition of vegetation and invertebrate life Moderate stand of emergent vegetation throughout pool. Some Chironomids noted; no concentrations of dead invertibrates.

Remarks
Pool was without control structure during construction. Structure completed in Sep.

Lead Poisoning or other Disease

Kind of disease

Species affected

Number Affected Species	Actual Count	Estimated

Number Recovered

Number lost

Source of infection

Water conditions

Food conditions

Remarks

NR-6

Bureau of Sport Fisheries and Wildlife

PUBLIC RELATIONS

(See Instructions on Reverse Side)

Refuge Selby Hill Preserve Calendar Year 1967

1. Visits

a. Hunting _____ b. Fishing _____ c. Miscellaneous 20,500 d. TOTAL VISITS 20,500

1a. Hunting (on refuge lands)

TYPE	HUNTERS	ACRES	MANAGED BY
Waterfowl			
Upland Game			
Big Game			
Other			

Number of permanent blinds _____

Man-days of bow hunting included above _____

Estimated man-days of hunting on lands adjacent to refuge 200

1b. Fishing (area open to fishing on refuge lands)

TYPE OF AREA	ACRES	MILES
Ponds or Lakes		
Streams and Shores		

1c. Miscellaneous Visits

Recreation 20,500 Official 50

Economic Use 20 Industrial _____

2. Refuge Participation (groups)

TYPE OF ORGANIZATION	On Refuge NO. OF GROUPS	On Refuge NUMBER IN GROUPS	Off Refuge NO. OF GROUPS	Off Refuge NUMBER IN GROUPS
Sportsmen Clubs			1	40
Bird and Garden Clubs	1	10		
Schools	2	40		
Service Clubs			1	25
Youth Groups	1	6	1	12
Professional-Scientific	1	40	2	100
Religious Groups				
State or Federal Govt.				
Other			6	80

3. Other Activities

TYPE	NUMBER	TYPE	NUMBER
Press Releases	4	Radio Presentations	
Newspapers (P.R.'s sent to)	2	Exhibits	
TV Presentations		Est. Exhibit Viewers	

3-1756

(Rev. 4/63)

INSTRUCTIONS

Item 1: Total of a, b, and c, equal d.

"Visit" - definition. Any person who is on refuge lands or waters during a day or part thereof for the purpose of: hunting, fishing, bird-watching, recreation, business or economic use, official visit, or similar interest. INCLUDE - those who stop within the refuge while traveling on a public highway because of an interest in the area. EXCLUDE - persons engaged in oil or other industry not directly related to the refuge, persons using refuge as most direct route or principal avenue of traffic, and those boating on navigable rivers or the Intercoastal Canal, unless they stop to observe wildlife on the refuge.

Computing visits. Where actual counts are impractical, "sampling" is used with midweek and weekend samples varied by season or weather. A conversion factor of 3.5 (of passengers per car) is used when accurate figures are not available. Each refuge will develop a conversion factor for boats based on range of usage. Count a camper once for each 24-hour period or fraction thereof.

Item 1a: Acres - of refuge open for each type of hunting.

Managed hunts require check in and out of hunters, issuance of permits, or assignment of blinds.

Other - INCLUDE crow, fox, and similar hunting.

Lands adjacent to refuge. Normally considered within 1 mile or less of boundary, unless established sampling procedures cover a wider area. For big game hunting, the distance may be greater.

Item 1b: Acres of streams open to fishing, if practical; otherwise just miles open. Information on "shores" is primarily for coastal fishing.

Item 1c: Recreation. INCLUDE photography, observing wildlife, picnicking, swimming, boating, camping, visitor center use, tours, etc. TOTAL Recreation, Official, and Economic Use visits under Item 1.

Industrial. INCLUDE persons engaged in industry, i.e., oil industry or factories. EXCLUDE these from Item 1.

Item 2: INCLUDE the "On Refuge" groups in Items 1c and 1. In "Off Refuge" column include only those group meetings in which refuge employees actually participate. EXCLUDE these from Items 1c and 1.

Item 3: Exhibits - INCLUDE displays, fairs, parades, and exhibits OFF the refuge; EXCLUDE those ON.

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge Sully's Hill Preserve County Ramsey State N. Dak.

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./Tons	Acres	Bu./Tons			
Oats		600 bu		300 bu	1		30		
								Fallow Ag. Land	

No. of Permittees: Agricultural Operations 2 (hay perm) Haying Operations 4 Grazing Operations 1

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	GRAZING	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	63 (9 stk)	90	56 T (8 stk)					
Alf-Brome	42 (6 stk)	80	for big game	1. Cattle	25	100	$207.00	160
Alf-native	28 (4 stk)	40	feed.					
Brome	21 (3 stk)	43		2. Other				
Native	28 (4 stk)	40	12 T. sold					
	182	293	$50.00					
				1. Total Refuge Acreage Under Cultivation				30
Hay - Wild	27 3/4	6	$97.12	2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

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REFUGE GRAIN REPORT

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Refuge Sullys Hill Preserve Months of Jan. through Dec., 195__

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Corn	-	200	200			100	100	100		100	None
Millet	300		300			250	250	50		50	None
Oats	-	300	300			100	100	200		200	None

(8) Indicate shipping or collection points 200 bu. corn received from Tewaukan NWR

(9) Grain is stored at Preserve hqs

(10) Remarks

*See instructions on back.

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NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

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